Endocrine Disruptors

ISSN: (Print) 2327-3747 (Online) Journal homepage: http://tandfonline.com/loi/kend20

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To cite this article: Karen M. Dean, Leah D. Baltos, Tiffany Carro, Andrew, N. Iwaniuk, Meredith

E.B. Bohannon & Mary Ann Ottinger (2016): Comparison of vehicle mortality following in ovo

exposure of Japanese quail (Coturnix japonica) eggs to corn oil, triolein and a fatty acid mix,

Endocrine Disruptors, DOI: 10.1080/23273747.2016.1224022

To link to this article: http://dx.doi.org/10.1080/23273747.2016.1224022

Accepted author version posted online: 22

Aug 2016.

Published online: 22 Aug 2016.

Comparison of vehicle mortality following *in ovo* exposure of Japanese quail (*Coturnix japonica*) eggs to corn oil, triolein and a fatty acid mix

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ABSTRACT

The use of avian egg bioassays for the determination of embryonic mortality and development effects of toxicant exposure is widespread in ecotoxicology. While these studies have a number of experimental limitations to consider, they offer a rapid, cost effective alternative to maternal feeding studies. In preparing to conduct such studies a number of factors must be taken into consideration, including solubility of the toxicant, dissolution solvent, injection site, volume and incubation position. Species-specific requirements for humidity and position should be considered in order to optimize successful incubation with different species. Japanese quail eggs, were injected prior to incubation with 1µl or 5µl of corn oil, triolein or a fatty acid mix, using air cell or albumen injection. Eggs were incubated according to standard poultry practices or in a prone position to determine if there were any differences in hatching success. Hatching success was reduced in eggs that were injected with 5µl and those incubated in a prone position. The highest rate of hatching success was observed for eggs injected with 1µl of the fatty acid mixture through the air cell.

Keywords

embryonic mortality, Japanese quail, vehicle mortality, incubation position, air cell injections, albumen injections